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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,242	11/10/2005	Kevin R. Boyle	GB 030076	6713

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EXAMINER	
TRINH, TAN H	

ART UNIT	PAPER NUMBER
2618	

NOTIFICATION DATE	DELIVERY MODE
01/10/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/556,242	BOYLE, KEVIN R.	
	Examiner	Art Unit	
	TAN TRINH	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 November 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 11-10-2005, the information disclosure statement has been considered by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sadler (U.S. Pub. No. 2004/0198293) in view of Schamberger (U.S. 2003/0117331).

Regarding claims 1 and 9, Sadler teaches a wireless terminal (600) including a substrate having a ground plane (104 or 202 or 604 and 612) thereon (see fig. 1-2A-B and 6, page 1, sections [0002 and 0007], page 3, section [0024]), RF components (602) mounted on the substrate and a PIFA (Planar Inverted-F Antenna) (606) having connections electrically coupled to the ground plane (604, 612 and 614) (see fig. 6, section [0024]), and the RF components (602) characterised in that a duplexer or the simplex device is provided in the substrate for receiving signals and in that de-activating are provided for de-activating the PIFA (606) is being used for transmitting signals (see fig. 5-6, pages 3-4, sections [0027-0028]). In this case, the simplex device, the antenna provides purely for receive and purely for transmit, acting a notch antenna is

provided for receiving signals and in that de-activating are provided for de-activating the the PIFA (606) is being used for transmitting signals. But Sadler does not mention the characterised in that a notch antenna for receiving signals and in that de-activating are provided for de-activating the notch antenna when the PIF is being used for transmitting signals.

However, the Schamberger teaches the characterised of the notch antenna for de-activating transmitting signals or receiving signals when the duplexer or transmit/receive switch component is avoided (see fig. 1, notch antenna 120 and 130, and page 2-3, sections [0019 and 0029]). In this case, the notch antennas 120 and 130 is de-activating transmitting signals or receiving signals acting like a transmit/receive switch.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Sadler with Schamberger. In order to provide transmit or receive switching when the duplexer or transmit/receive switch component is avoided (see suggested by Schamberger on page 2, section [0019]).

4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanford (U.S. patent No. 6,424,300) in view of Schamberger (U.S. 2003/0117331).

Regarding claims 1 and 9, Sanford teaches a wireless terminal (601) (fig. 6C) including a substrate (704) having a ground plane (706) thereon (see fig. 6-7A-C, col. 17, lines 8-43), RF antenna components (700) mounted on the substrate and a PIFA (Planar Inverted-F Antenna) (see col. 14, lines 35-42, and col. 15, lines 59-62), having connections electrically (710) coupled to the ground plane (706), and the RF components (710 and 714) characterised in that a notch antenna (701 or 801) (see fig. 7A-C and 8A-D, and col. 4, lines 38-49) is provided in the

substrate (704 or 804)) for receiving signals and transmitting signals to configured to selected frequency band (see fig. 6-7 and 10A-C, col. 17, lines 21-36). But Sanford teaches does not mention the characterised in that a notch antenna for receiving signals and in that de-activating are provided for de-activating the notch antenna when the PIF is being used for transmitting signals.

However, the Schamberger teaches the characterised of the notch antenna for de-activating transmitting signals or receiving signals when the duplexer or transmit/receive switch component is avoided (see fig. 1, notch antenna 120 and 130, and page 2-3, sections [0019 and 0029]). In this case, the notch antennas 120 and 130 is de-activating transmitting signals or receiving signals acting like a transmit/receive switch.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Sanford with Schamberger. In order to provide transmit or receive switching when the duplexer or transmit/receive switch component is avoided (see suggested by Schamberger on page 2, section [0019]).

Regarding claim 2, Sanford teaches characterised in that the PIFA is a dual band slotted planar patch antenna (see fig. 4-5 and 7-8, col. 1, lines 26-54, col. 8, lines 57-60, and col. 17, lines 24-26).

Regarding claim 3, Schamberger teaches a wireless terminal characterised in that the de-activating means is responsive to activation of the notch antenna to de-activate the PIFA (see fig.

1, notch antenna 120 and 130, and page 2-3, sections [0019 and 0029]). In this case, the notch antennas 120 and 130 is de-activating transmitting signals or receiving signals acting like a transmit/receive switch.

Regarding claim 4, Schamberger teaches the de-activating means comprises means for de-tuning the notch antenna (see fig. 1, notch antenna 120 and 130, and page 2-3, sections [0019 and 0029]). In this case, the notch antennas 120 and 130 is de-activating transmitting signals or receiving signals acting like a transmit/receive switch. Since the de-activating or switch off is de-turning the notch antenna. (also see ref. US Patent No. 7, 194284. fig. 3, switch off is de-turned the antenna).

Regarding claims 5 and 10, Sanford teaches characterised in that capacitance means are connected across the notch for tuning the notch antenna and in that the means for de-activating the notch antenna comprises means for shorting the capacitance means (see fig. 6A-B capacitor 612A-B, col. 16, lines 26-52). In this case, when de-activating the notch antenna is shunt the capacitance 612b.

Regarding claim 6, Schamberger teaches the de-activating means comprises a passive network (46) presenting an open circuit at the operating frequency of the patch antenna and a short circuit at the operating frequency of the PIFA (see page 1, sections [0016-0019]).

Regarding claim 7, Schamberger teaches characterised in that the de-activating means has a diversity operating mode in which both the PIFA and the notch antenna are active in a receive mode and in that means are provided for summing output signals from the PIFA and the notch antenna (see fig. 2, page 1, section [0007] and page 2-3, sections [0024 and 0029-0030]).

Regarding claim 8, Schamberger teaches characterised by means for measuring the contemporaneous quality of signals received by the PIFA and the notch antenna and for selecting for receiving signals that one of the PIFA and notch antenna receiving the better quality signals (see fig. 3-4, page 1, section [0007], page 3, section [0032-0034]). In this case, the selecting for receiving signals is on the center slot, since is better than 17 dB.

Conclusion

5. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window (now located at the ***Randolph Building, 401 Dulany Street, Alexandria, VA 22314).***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh
Division 2618
January 2, 2008